

What Is Claimed:

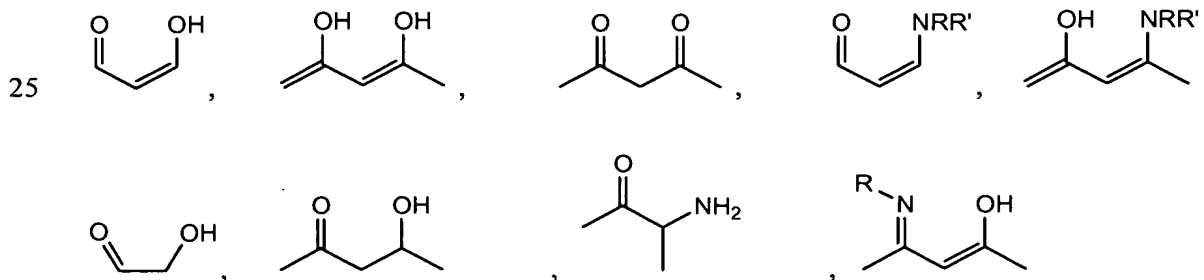
1. A method of utilizing a triggerably releasable delivery system in the treatment of a patient's body comprising:

- a) providing at least one type of particle selected from alumina particles, alumina covered particles, and silica particles;
- b) adsorbing at least one functional compound to the surface of the particle or particles to form at least a partially coated particle or particles;
- c) placing the at least partially coated particle or particles in a position adjacent or within a patient's body;
- d) exposing the particle or particles to an environmental or chemical condition whereby the functional compound is released from the surface of the particle to the patient's body.

2. The method of claim 1 wherein the environmental or chemical condition is selected from the group consisting of a chemical trigger, a change in pH, introduction of the particle to moisture or body exudates.

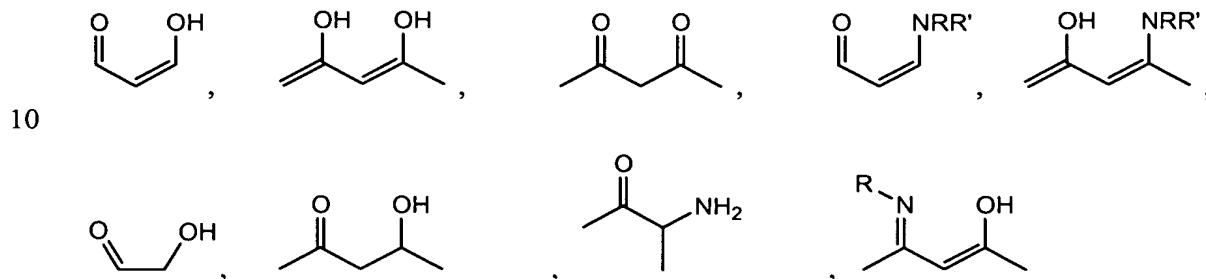
3. The method of claim 1 wherein multiple types of particles are coated with functional compounds.

4. The method of claim 1 wherein the particles contain alumina, at least a portion of the alumina being present on a surface of the particles; and the functional compound prior to adsorbing with the alumina particle containing a moiety comprising:



or a tautomer thereof, or a functional equivalent thereof and wherein R and R' comprise independently hydrogen, an alkyl group, or an aryl group.

5. A method of utilizing a triggerable delivery system comprising:
providing a plurality of particles, the particles containing alumina, at
least a portion of the alumina being present on a surface of the particles; and
bonding to the alumina on the surface of the particles a functional
compound, the functional compound prior to bonding with the alumina containing a
moiety comprising:



or a tautomer thereof, or a functional equivalent thereof and wherein R and R' comprise independently hydrogen, an alkyl group, or an aryl group;

15 introducing the particles to a body;

 exposing the particles to a change in pH such that the functional compound is released from the alumina.

20 6. The method of claim 5 wherein the particles are introduced to a body via
a vehicle.

7. The method of claim 6 wherein the vehicle is selected from a liquid or a gel.

8. The method of claim 5 wherein the particles are affixed to a substrate for application either to the skin of a body or into a body cavity.

9. The method of claim 8 wherein the particles are affixed to a transdermal
30 drug delivery device.

10. The method of claim 5 wherein the functional agent is selected from either a pharmaceutical or nutritional compound.

11. The method of claim 5 wherein the pH is changed from an acid to an alkaline pH.

12. The method of claim 11 wherein the pH is changed to a pH of between 9 to 10.

13. The method of claim 5 wherein the pH is changed from an alkaline to an acid pH.

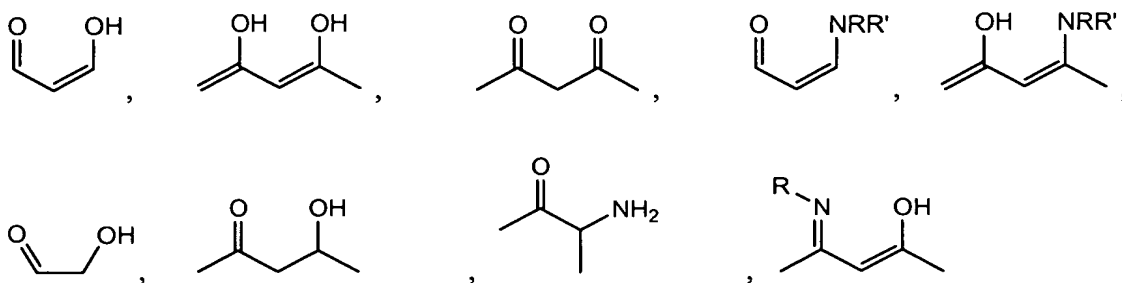
14. The method of claim 5, wherein the functional compounds include a chemical signal and either a pharmaceutical or nutritional compound.

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15. A method of utilizing a triggerable delivery system comprising:

providing a plurality of particles, the particles containing alumina, at least a portion of the alumina being present on a surface of the particles; and

20 bonding to the alumina on the surface of the particles a functional compound, the functional compound prior to bonding with the alumina containing a moiety comprising:



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or a tautomer thereof, or a functional equivalent thereof and wherein R and R' comprise independently hydrogen, an alkyl group, or an aryl group;

introducing the particles into a drug delivery device;

contacting the drug delivery device with a patient's body;

exposing the particles in the drug delivery device to a change in pH such that the functional compound is released from the alumina.

16. The method of claim 15 wherein the particles are introduced into a
5 drug delivery device via a vehicle.

17. The method of claim 16 wherein the vehicle is selected from a liquid or a gel.

10 18. The method of claim 15 wherein the particles are affixed to the drug delivery device for application either to the skin of a body or into a body cavity.

19. The method of claim 18 wherein the particles are affixed to a transdermal drug delivery device.

15 20. The method of claim 15 wherein the functional agent is selected from either a pharmaceutical or nutritional compound.

20 21. The method of claim 15 wherein the pH is changed from an acid to an alkaline pH.

22. The method of claim 21 wherein the pH is changed to a pH of between 9 to 10.

25 23. The method of claim 15 wherein the pH is changed from an alkaline to an acid pH.

24. The method of claim 15, wherein the functional compounds include a chemical signal and either a pharmaceutical or nutritional compound.

30 25. A triggerable delivery system comprising:
a particle; and

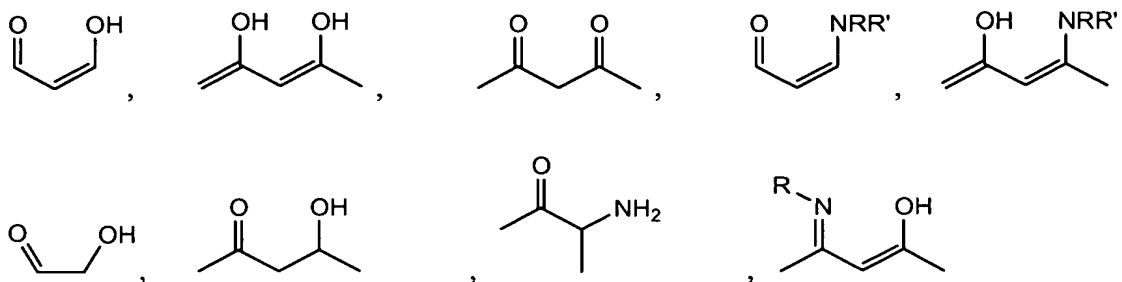
a health-related compound adsorbed to the surface of said particle, said health-related compound capable of being released from said particle upon either exposure to a change in pH, moisture, chemical stimuli, or body exudates.

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26. The triggerable delivery system of claim 25 wherein the particle contains alumina, at least a portion of the alumina being present on a surface of the particle; and

the health related compound, prior to being adsorbed with the alumina on the surface of the particle containing a moiety comprising:

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or a tautomer thereof, or a functional equivalent thereof and wherein R and R' comprise independently hydrogen, an alkyl group, or an aryl group.

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27. A drug delivery device including a triggerable delivery system, said triggerable delivery system comprising a particle; and a health-related compound adsorbed to the surface of said particle, said health-related compound capable of being released from said particle upon either exposure to a change in pH, moisture, chemical stimuli, or body exudates.

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